

What is claimed is:

1. A process of forming a ferroelectric polymer film comprising:
 

disposing a solution comprising a ferroelectric polymer film precursor composition and a solvent composition onto a substrate, wherein the solvent composition has a  $\delta_v$  value of greater than or equal to 8.5, wherein  $\delta_v = (\delta_d^2 + \delta_p^2)^{1/2}$ ,  $\delta_d$  being a Hansen dispersive solubility parameter and  $\delta_p$  being a Hansen polar solubility parameter; and

removing at least a portion of the solvent to produce a ferroelectric polymer film.
2. The process of claim 1, wherein the precursor composition comprises a vinylidene fluoride-containing polymer.
3. The process of claim 2, wherein the vinylidene fluoride-containing polymer comprises:
 

50 to 90 mol% of vinylidene fluoride; and

10 to 50 mol% of trifluoroethylene.
4. The process of claim 1, wherein the solvent composition has a boiling point above 100° Celsius.
5. The process of claim 1, wherein the solvent composition has a relative evaporation rate at 25° C of less than or equal to 1 compared to n-butyl acetate.
6. The process of claim 1 further comprising irradiating the film with an electron beam.
7. The process of claim 1, wherein the ferroelectric polymer film has an atomic force microscopy roughness of 10 to 100 Angstroms.
8. The process of claim 1, wherein the ferroelectric polymer film comprises crystalline domains having an average size of 1 to 10 nanometers.
9. The process of claim 1, wherein the ferroelectric polymer film has a coercivity field strength of 20 to 80 MV/m.
10. The process of claim 1, wherein the ferroelectric polymer film has a polling fatigue that is no more than 70% of 100 cycles at a drive amplitude of 100MV/m.
11. The process of claim 1, wherein the ferroelectric polymer film has a differential permittivity of 0.5 to 15 nC/m\*V.

12. The process of claim 1, wherein the ferroelectric polymer film has a Curie transition temperature of 90 to 145 degrees Celsius.
13. A process for selecting a solvent for forming a ferroelectric polymer film comprising: selecting a solvent composition that substantially solubilizes a ferroelectric polymer film precursor composition, the solvent having a  $\delta_v$  value of greater than or equal to  $8.5 \text{ (cal/cc)}^{1/2}$ , wherein  $\delta_v = (\delta_d^2 + \delta_p^2)^{1/2}$ ,  $\delta_d$  being a Hansen dispersive parameter, and  $\delta_p$  being a Hansen polar solubility parameter.
14. A solvent composition for forming a ferroelectric polymer film, comprising at least two solvents, and the solvent composition having a  $\delta_v$  value of greater than or equal to  $8.5 \text{ (cal/cc)}^{1/2}$ , wherein  $\delta_v = (\delta_d^2 + \delta_p^2)^{1/2}$ ,  $\delta_d$  being a Hansen dispersive parameter, and  $\delta_p$  being a Hansen polar solubility parameter.
15. A composition for forming a ferroelectric polymer film, comprising:
  - a ferroelectric polymer film precursor composition, and
  - a solvent, wherein the solvent has a  $\delta_v$  value of 8.5 to 15  $\text{(cal/cc)}^{1/2}$ , wherein  $\delta_v = (\delta_d^2 + \delta_p^2)^{1/2}$ ,  $\delta_d$  being a Hansen dispersive parameter, and  $\delta_p$  being a Hansen polar solubility parameter.
16. A ferroelectric polymer film, comprising:
  - a layer of polymeric material formed from a solution comprising a ferroelectric polymer film precursor composition and a solvent, wherein the solvent has a  $\delta_v$  value of greater than or equal to  $8.5 \text{ (cal/cc)}^{1/2}$ , and wherein  $\delta_v = (\delta_d^2 + \delta_p^2)^{1/2}$ ,  $\delta_d$  being a Hansen dispersive parameter, and  $\delta_p$  being a Hansen polar solubility parameter.
17. The film of claim 16, further comprising a polymer comprising vinylidene fluoride and trifluoroethylene.
18. The film of claim 16 having an atomic force microscopy roughness of 10 to 100 Angstroms.
19. The film of claim 16 comprising crystalline domains having an average size of 1 to 10 nanometers.

20. A data processing device comprising:

a ferroelectric polymer film formed from a solution comprising a ferroelectric polymer film precursor composition and a solvent, wherein the solvent has a  $\delta_v$  value of 8.5 to 15 (cal/cc)<sup>1/2</sup>, wherein  $\delta_v = (\delta_d^2 + \delta_p^2)^{1/2}$ ,  $\delta_d$  being a Hansen dispersive parameter, and  $\delta_p$  being a Hansen polar solubility parameter;

and wherein the ferroelectric polymer film is a continuous layer in contact with a first electrode structure and a second electrode structure, the first electrode structure and the second electrode structure each comprising substantially mutually parallel strip electrodes such that the electrode structures mutually form a substantially orthogonal x, y matrix, and a portion of the ferroelectric polymer film at an intersection between an x electrode and a y electrode of the electrode matrix forms a logic element electrically connected to form the data processing device.